

Dear Sirs,

As an unlicensed operator (Wireless ISP) I'd like to put forth a few thoughts on this issue.

I think that, as a rule, the ISM rules are working quite well. A couple of things that I think would help the outdoor industry are not often talked about.

1: A chunk of spectrum that is available for PTP (point to point) only would be very useful for backhaul and telco backup links.

2: I also think that power levels higher than are currently available should be allowed in low population density areas. I have one "tower" that has LOS (line of site) to houses 15 or more miles away. Still there are only 40 to 50 homes in that 5 to 25 mile (depends on direction) cell. Right now, power levels allow a maximum stable cell size of 12 to 15 miles.

I'd like to see the TV bands used as well. The radios we use now (802.11b) check for occupied spectrum and will not transmit if the band is already full. The mechanism in place to do that is far too fragile for outdoor use and the radios don't typically auto change channels but those issues could be addressed I think. It seems like it would be pretty easy to make the radios check the airwaves every few minutes (rather than with every transmission as it is today) or upon powering up and hop till an open channel is found.

Having sufficient power levels based upon population density and geography will be important to the outdoor uses as well. Out here 20 to 30 mile cells would be great and would not likely exceed 200 to 500 users per cell, even when covering more than one town at a time. In metro areas 2 miles might lead to 200 customers per cell. (I use 200 to 500 per cell as that seems to be what the average 2 to 6 access point "cell" will handle nicely, more than 6 ap's per cell is very difficult with the more common technology of the day due to the channel plans in place.)

People servicing forested areas could often use more power as well. This gets to be less of a problem at the lower frequencies due to the natural propagation properties.

Urban areas in many cases should be allowed less power than they are today OR be strongly encouraged to use much higher frequencies so that the "spectrum congestion" issues are minimized. With the new OFDM protocols the ability to utilize multipath are much better than ever before. Higher throughputs are also possible on ever smaller chunks of spectrum.

Radios that broadcast some information about themselves would also be very nice from a system design/troubleshooting standpoint. I think that all unlicensed devices (especially those that *could* be used outdoors) should emit some form of identifier. It should report it's brand, channel, power setting etc. This information, some will say is proprietary to the company but it's all info that CAN be found out (and often needs to be found out) anyway via alternate methods. Having this information reported in a format that would be easy to extract with common tools would help new operators design around existing players.

As much as possible the commission should take a hands off approach though. Set power levels, interference levels and channel widths (please give us many more channels than before though!!!!) and leave the protocols, algorithms, etc. to

the radio manufacturers. The current Darwinian approach to the spectrum has lead to some very innovative systems design.

Sincerely,
Marlon K. Schafer